Los Alamos Large Scale Demonstration and Deployment Project

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The Los Alamos LSDDP was established to address DOE's contaminated large metallic objects

- 28,000 m^3 of TRU boxed waste in DOE
- 2400 m^3 at LANL in Storage
- 3000 m^3 from future D&D at LANL
- 8200 m^3 at RFETS
- 150 oversized crates at INEEL AMWTP
- 58 steel boxes at NTS
- 30 oversized crates at LLNL

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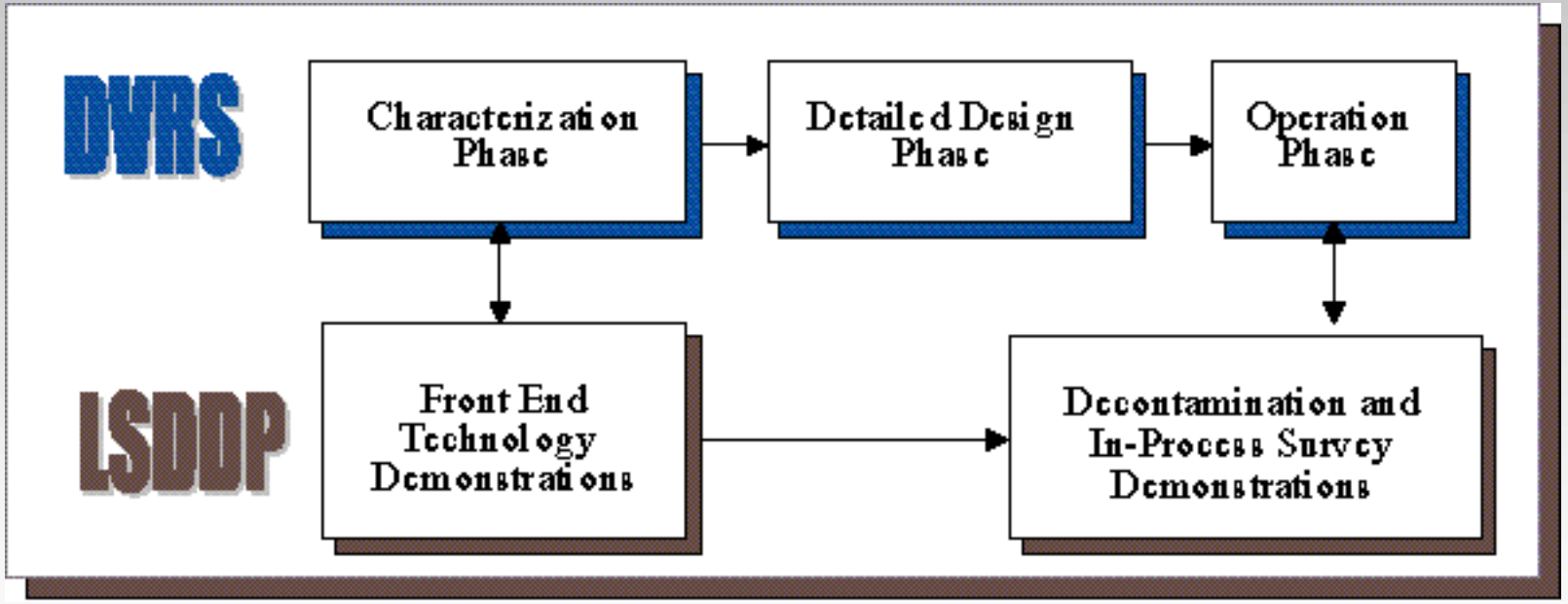
Crated LANL large metal objects after retrieval

Glovebox during crating

The LSDDP approach supports the LANL DVRS operation and deployment



The Los Alamos DVRS baseline process separates TRU from LLW

- Assay of crates
- Manual opening of crates
- Manual removal of packing & equipment
- Removal of legs and apurtenances
- Removal of shielding
- Gross decontamination
- HP water decontamination
- Shear/Baler volume reduction
- Packaging and manifesting

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Technology Demonstration: AeroGo air lift pallets

- Technology is to expedite movement and accurate positioning of crates in DVRS slab counter
- The baseline technology is “heavy hauler” wheeled carts
- Technology is well developed in commercial industry
- Demonstration took place in June 1999

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DVRS Slab Counter for Application of AeroGo Pallets

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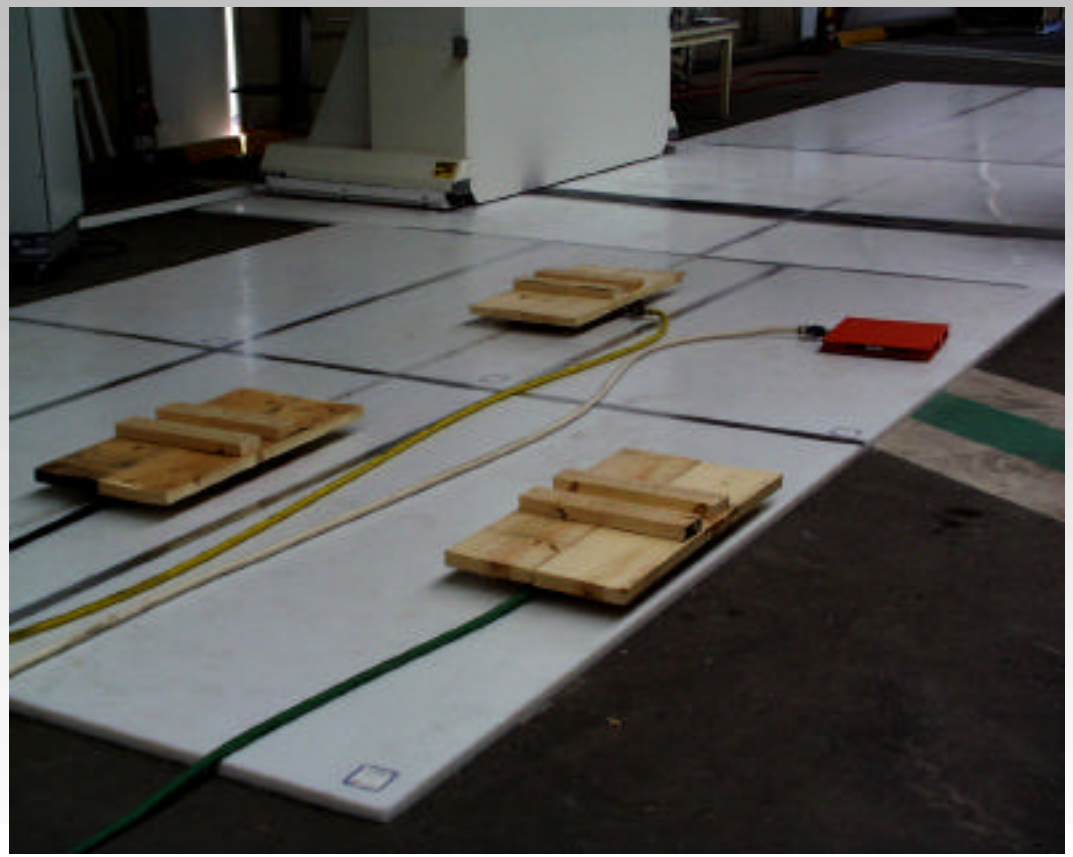
AeroGo Load Modules



The AeroGo demonstration was successful;

- Crates were moved through Large Item Neutron Counter better than wheeled cart baseline
- Crates were moved through a large “maze” to demonstrate that the AeroGo air pallets maneuverability
- Equipment operated by LANL technical staff provided qualitative input to evaluation
- LANL SWO has purchased two versions of AeroGo pallets for continued use.

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Contact Information

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- Bob Jeffers; AeroGo; 206-283-0785

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Technology Demonstration: VACIS Mobile RTR System

- Technology is to RTR crates to identify mixed waste and to improve safety in crate opening and processing
- Technology is a risk reduction for DVRS operation as RTR was not in baseline
- Technology was developed by SAIC for US Customs to locate contraband in trucks
- Demonstration unit was prototype for transportable system under test by DoD
- Demonstration took place in June 1999

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Mobile VACIS Deployed for Radiography

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The Mobile VACIS is a Compact Unit for Road Travel

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VACIS Provided Excellent Images of Crate Contents

Gloveboxes with Drill Press and Mill

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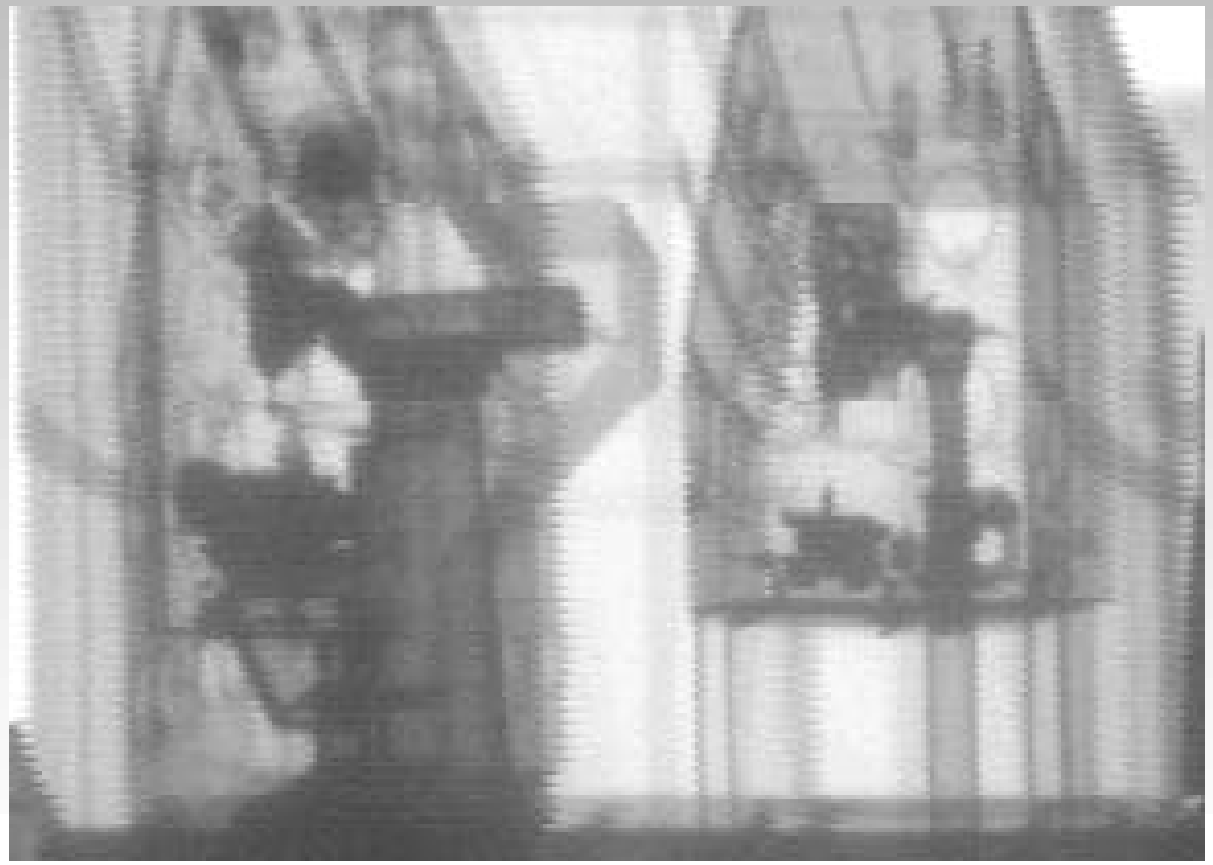
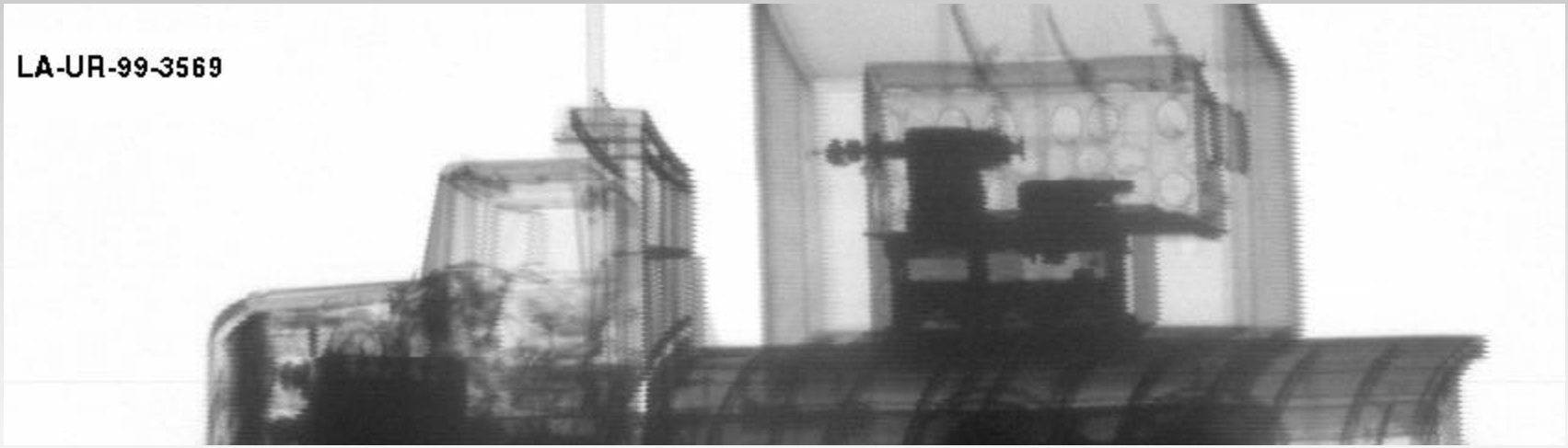
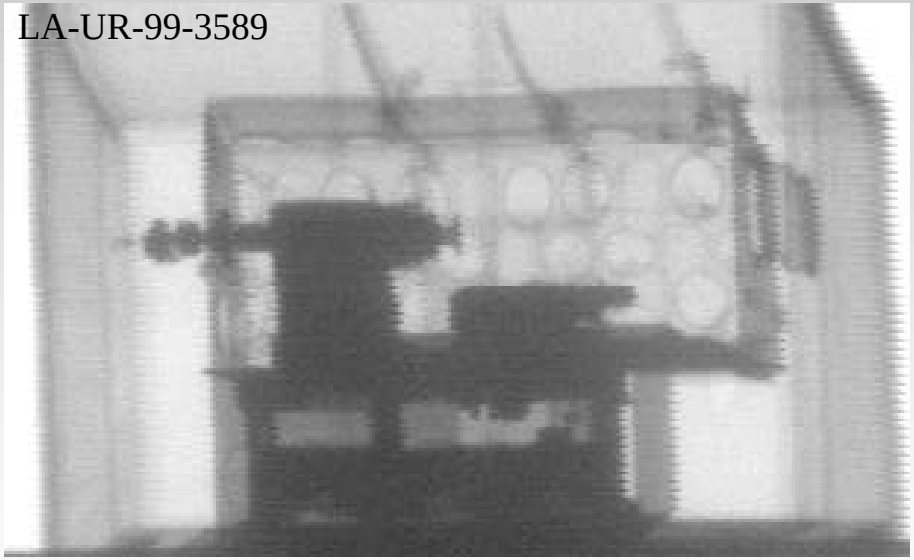


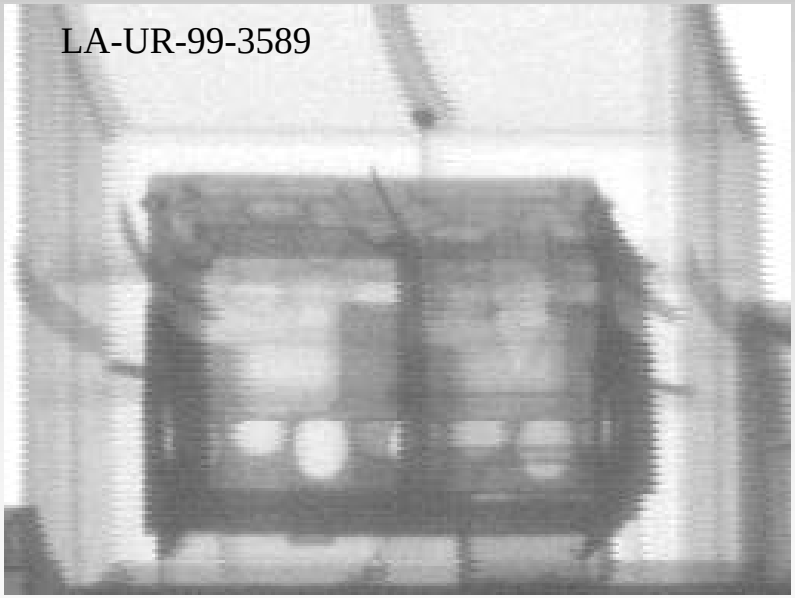
VACIS Provided Excellent Images of Crate Contents



VACIS Images Support Information on Crate Contents



Vacis Provided Excellent Images of Crate contents



Crates with Trash were Identifiable

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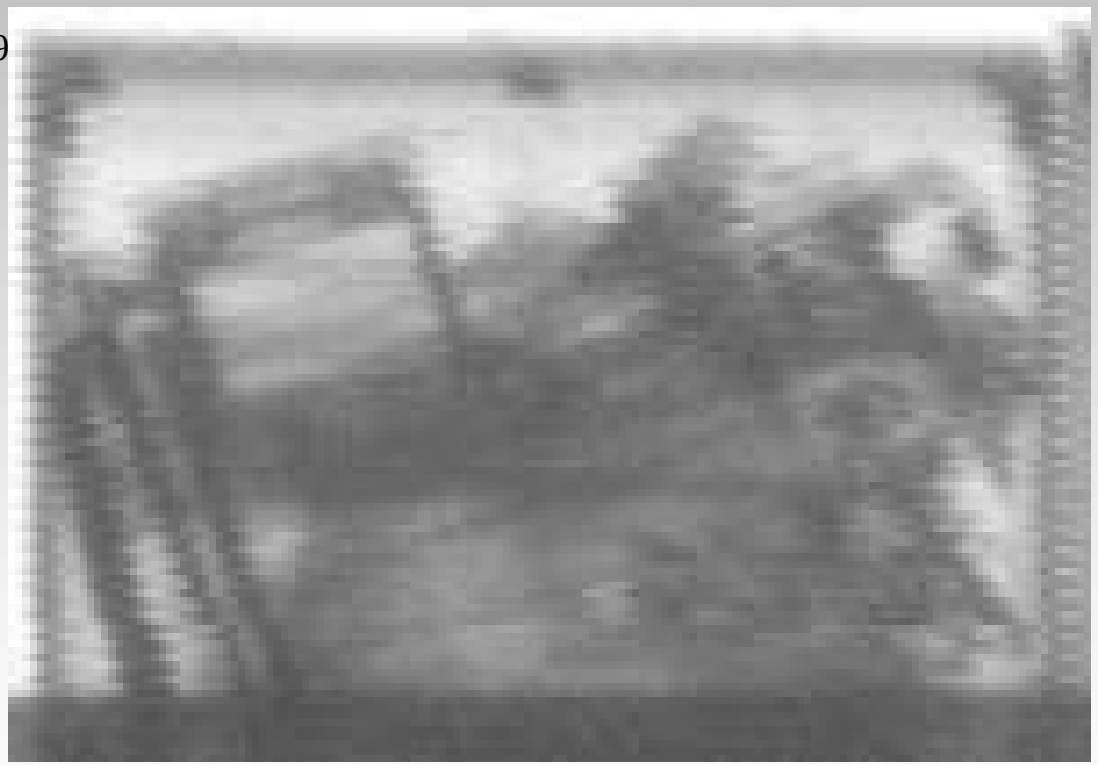

Standard Waste Box Contents were Identifiable

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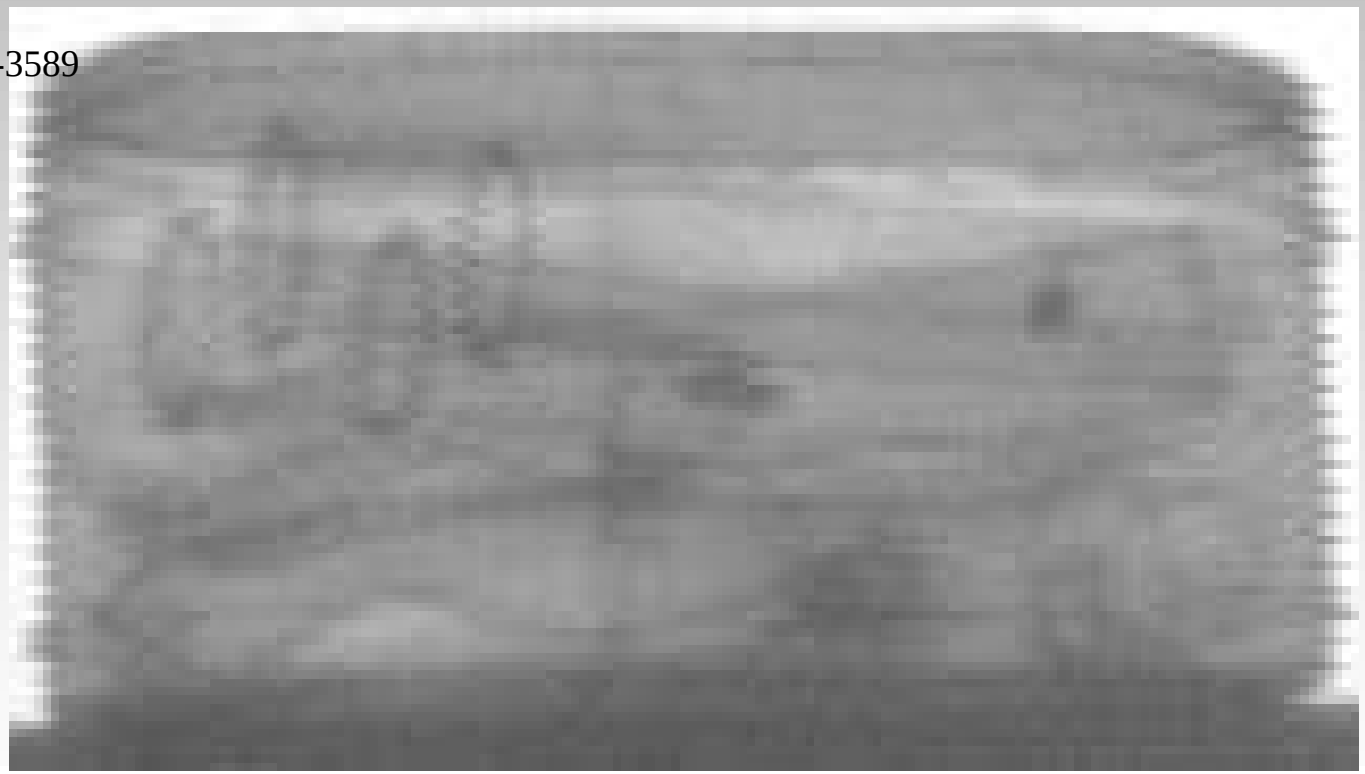

The VACIS Demonstration was Very Successful

- 43 Crates were imaged in a short time
- LANL SWO Intends to image the remaining crates in the inventory to improve safety of opening of crates and DVRS operation.
- The WIPP Characterization parties are interested in the technology.

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Technology Demonstration: MCS X-Ray of crates

- Technology is to RTR crates to identify mixed waste and to improve safety in crate opening and processing; improvement over baseline
- Technology is a risk reduction for DVRS operation as RTR was not in baseline
- Prototype based on systems for WIPP waste certification
- Transportable X-Ray systems deployed at many sites for RTR of TRU drums
- Demonstration scheduled for October 1999.

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Technology Demonstration; Mega-Tech hydraulic cutter

- Hydraulic cutter is to demonstrate improvement in time and risk in removing glovebox legs and apurtenances.
- Baseline is reciprocating saw
- Demonstration was in a simulated radioactive environment using LANL labor to dismantle several gloveboxes and improve data quality.
- Demonstration will be off-site to reduce cost.
- Demonstration took place in September 1999.

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The MegaTech scope includes:

- The demonstration system was supplied by MegaTech
- Actual operation was by LANL operations staff in full anti-Cs to represent radioactive operations
- A fixture was constructed to facilitate cutting of multiple sets of glovebox legs for both the innovative and baseline technology
- Two types of glovebox legs were simulated and cut
- Other items representative of glovebox disassembly were also demonstrated
- The operator's qualitative observations were an integral part of the evaluation process

Mega-Tech Blade Cutting Plunger BPC-4

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Mega-Tech Blade Cutting Plunger

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The Mega-Tech Demonstration was Successful

- The data facilitates straightforward comparison of Mega-Tech and the baseline
- The hydraulic cutter was 60% faster than the baseline
- The hydraulic cutter is less likely to lead to cuts/ injuries than the baseline
- The hyrdraulic cutter produced no secondary waste.
- Mega-Tech demonstrated a prototype cutter that would be more convenient for LANL-Type glovebox legs.

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Conclusion:

- The LANL LSDDP successfully demonstrated an SAIC developed large crate radiographing system that will be deployed at LANL and has broad interest in DOE.
- The LANL LSDDP successfully demonstrated an AeroGo air pallet system that has been deployed at LANL
- The LANL LSDDP successfully demonstrated a Mega-Tech hydraulic cutter that has deployment potential in DOE

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